

In the Claims:

Please amend claims 1, 3-10, 13-16, 18, 51, 53-59, 62-65, 67, 72, 100-108, 110-112 and 116, as indicated below.

1. (Currently amended) A method for bridging a first computing environment based upon a message passing model to a second computing environment, comprising:

a first entity in the first computing environment obtaining an advertisement for a service accessible through the second computing environment, wherein the advertisement includes access information for accessing the service;

the first entity using the access information from the advertisement to access the service, wherein the first entity using the access information from the advertisement comprises the first entity accessing a proxy service through messages in a data representation language in the first computing environment and according to the access information in the advertisement;

the proxy service providing to the first entity an interface to a second entity in the second computing environment, wherein the second entity is the service in the second computing environment; wherein the first entity can not distinguish between the proxy service ~~appears to the first entity as the second entity~~ and the service in the second computing environment; and

the first entity accessing the service ~~second entity~~ in the second computing environment through the interface provided by the proxy service and according to the access information in the advertisement.

2. (Original) The method as recited in claim 1, wherein the interface provides a data representation language messaging channel between the proxy service and the first entity in the first computing environment, and wherein the interface further provides a

communications channel between the proxy service and the second entity in the second computing environment.

3. (Currently amended) The method as recited in claim 1, wherein the first entity is a client in the first computing environment, ~~wherein the second entity is a service accessible through the second computing environment, and~~ wherein the interface provided by the proxy service enables the first entity to access resources provided by the service second entity to clients in the second environment.

4. (Currently amended) The method as recited in claim 3, wherein the proxy service providing to the first entity the interface to the second entity in the second computing environment comprises locating the service second entity among a plurality of services accessible through the second computing environment.

5. (Currently amended) The method as recited in claim 4, wherein said locating the service second entity among the plurality of services accessible through the second computing environment comprises determining that the second entity includes information identifying the entity as ~~[[a]]~~ the service accessible by entities in the first environment through proxy service interfaces to the second computing environment.

6. (Currently amended) The method as recited in claim 3, wherein the proxy service providing to the first entity an interface to ~~[[a]]~~ the second entity in the second computing environment comprises providing ~~[[an]]~~ the advertisement for the service second entity, ~~wherein the advertisement for the second entity includes access information for accessing the second entity in the second environment from the first environment.~~

7. (Currently amended) The method as recited in claim 6, further comprising:

publishing the advertisement for the service second entity on a space in the first computing environment; and

wherein the first entity accessing a service ~~second entity~~ in the second computing environment through an interface comprises:

the first entity accessing the advertisement for the service ~~second entity~~ from one or more advertisements published on the space; and

the first entity accessing the service ~~second entity~~ in accordance with the access information in the advertisement for the second entity.

8. (Currently amended) The method as recited in claim 6, wherein the advertisement includes information describing one or more computer programming language method calls to methods in the computer programming language provided by the service ~~second entity~~, the method further comprising constructing on the first entity a client method gate configured to provide an interface to the service ~~second entity~~ by generating data representation language messages including information representing the method calls.

9. (Currently amended) The method as recited in claim 8, wherein the first entity accessing the service ~~second entity~~ comprises:

the first entity generating a method call in the computer programming language;

the client method gate generating a data representation language message including information representing the method call;

the client method gate sending the data representation language message to a proxy method gate comprised on the proxy service;

the proxy method gate generating one or more objects in the computer programming language from the information representing the method call;
and

the proxy service invoking a method ~~[[on]]~~ of the service ~~second-entity~~, wherein the one or more objects are passed to the method in said invoking.

10. (Currently amended) The method as recited in claim 9, further comprising:

the ~~second-entity~~ service executing the invoked method, wherein said executing generates results data;

the ~~second-entity~~ service sending the results data to the proxy service.

11. (Original) The method as recited in claim 10, further comprising:

the proxy service generating a results advertisement for the results data;

the proxy service sending the results advertisement to the client method gate; and

the first entity generating a results method gate from the results advertisement sent to the client method gate.

12. (Original) The method as recited in claim 8, wherein the computer programming language is Java.

13. (Currently amended) The method as recited in claim 1, further comprising:

the first entity sending a first message in the data representation language to the proxy service, wherein the first message includes information for the ~~second-entity~~ service;

converting the first message in the data representation language to a first transmission compatible with the second computing environment and receivable by the ~~second entity~~ service in the second computing environment; and

sending the first transmission to the ~~second entity~~ service in the second computing environment.

14. (Currently amended) The method as recited in claim 1, further comprising:

the ~~second entity~~ service sending a first transmission compatible with the second computing environment to the proxy service, wherein the first transmission includes information for the first entity;

converting the first transmission to a first message in the data representation language, wherein the first message includes the information from the first transmission; and

sending the first message to the first entity in the first computing environment.

15. (Currently amended) The method as recited in claim 14, wherein the first entity is a client in the first computing environment, ~~wherein the second entity is a service accessible through the second computing environment~~, and wherein the information in the first transmission is results data generated by the service ~~second entity~~ in response to a request sent to the service ~~second entity~~ by the first entity through the proxy service.

16. (Currently amended) The method as recited in claim 1, further comprising:

the service ~~second entity~~ sending a first transmission compatible with the second computing environment to the proxy service, wherein the first transmission includes data for the first entity;

storing the data received in the first transmission; and

providing an advertisement for the stored data to the first entity, wherein the advertisement for the stored data includes access information for the stored data.

17. (Original) The method as recited in claim 16, further comprising:

the first entity accessing the advertisement for the stored data; and

the first entity accessing the stored data in accordance with the access information for the stored data in the advertisement for the stored data.

18. (Currently amended) The method as recited in claim 16, wherein the first entity is a client in the first computing environment, ~~wherein the second entity is a service accessible through the second computing environment~~, and wherein the data in the first transmission is results data generated by the service ~~second entity~~ in response to a request sent to the service ~~second entity~~ by the first entity through the proxy service.

19. (Original) The method as recited in claim 1, wherein the second environment is a message-based environment using a different language for messages than the data representation language used for messages in the first environment.

20. (Original) The method as recited in claim 1, wherein the second environment is a non-message based environment.

21. (Original) The method as recited in claim 1, wherein communication among entities in the second environment uses remote method invocation (RMI).

22. (Original) The method as recited in claim 21, wherein the second environment is a Jini environment.

23. (Original) The method as recited in claim 1, wherein the second environment is an enterprise computing environment, wherein the second entity is an enterprise service accessible through the enterprise computing environment.

24. (Original) The method as recited in claim 1, wherein the data representation language is eXtensible Markup Language (XML).

25. – 50. (Canceled)

51. (Currently amended) A distributed computing system, comprising:

a first device in a first computing environment based upon a message passing model;

a second device in a second computing environment not based upon the message passing model of the first environment, wherein the second device provides a service in the second computing environment; and

a proxy service configured to provide an interface to the second device in the second computing environment to entities in the first environment; ~~wherein the proxy service appears to the first entity as~~ such that the first entity can not distinguish between the proxy service and the second entity;

wherein the first device is configured to:

obtain an advertisement for the service, wherein the advertisement includes access information for accessing the service in the second computing environment from the first environment;

access the proxy service through messages in the data representation language in the first computing environment and according to the access information in the advertisement; and

access the service ~~second device~~ in the second computing environment through the interface provided by the proxy service and according to the access information in the advertisement.

52. (Original) The system as recited in claim 51, wherein, in said providing an interface, the proxy service is further configured to:

provide a data representation language messaging channel between the proxy service and the first device in the first computing environment; and

provide a communications channel between the proxy service and the second device in the second computing environment.

53. (Currently amended) The system as recited in claim 51, wherein the first device is a client in the first computing environment, ~~wherein the second device is a service accessible through the second computing environment,~~ and wherein the proxy service is further configured to enable the first device to access resources provided by the second device to clients in the second environment.

54. (Currently amended) The system as recited in claim 53, further comprising:

a plurality of services accessible through the second computing environment;

wherein, in said providing an interface, the proxy service is further configured to locate the ~~second device~~ service among the plurality of services accessible through the second computing environment.

55. (Currently amended) The system as recited in claim 54, wherein, in said locating the ~~second device~~ service among the plurality of services accessible through the second computing environment, the proxy service is further configured to determine that the second device comprises information identifying the device as a service accessible by entities in the first environment through proxy service interfaces to the second computing environment.

56. (Currently amended) The system as recited in claim 53, wherein, in said providing an interface, the proxy service is further configured to:

provide [[an]] the advertisement for the service ~~second device~~ in the second computing environment, ~~wherein the advertisement for the second device includes access information for accessing the second device in the second computing environment from the first environment;~~ and

wherein, in said accessing the service ~~second device~~ in the second computing environment through the interface, the first device is further configured to:

access the advertisement for the second device; and

access the second device in accordance with the access information in the advertisement for the second device.

57. (Currently amended) The system as recited in claim 56, wherein the advertisement includes information describing one or more computer programming language method calls to methods in the computer programming language provided by the ~~second device~~ service, wherein the first device is further configured to construct a

client method gate configured to provide an interface to the second device by generating data representation language messages including information representing the method calls.

58. (Currently amended) The system as recited in claim 57,

wherein, in said accessing the service ~~second device~~, the first device is further configured to generate a method call in the computer programming language;

wherein the client method gate is configured to:

generate a data representation language message including information representing the method call; and

send the data representation language message to a proxy method gate comprised on the proxy service;

wherein the proxy method gate is configured to generate one or more objects in the computer programming language from the information representing the method call; and

wherein the proxy service is further configured to invoke a method ~~[[on]]~~ of the service ~~second device~~, wherein the one or more objects are passed to the method in said invoking.

59. (Currently amended) The system as recited in claim 58, wherein the service ~~second device~~ is further configured to:

execute the invoked method, wherein said executing generates results data; and

send the results data to the proxy service.

60. (Original) The system as recited in claim 59,

wherein the proxy service is further configured to:

generate a results advertisement for the results data; and

send the results advertisement to the client method gate; and

wherein the first device is further configured to generate a results method gate
from the results advertisement sent to the client method gate.

61. (Original) The system as recited in claim 57, wherein the computer programming language is Java.

62. (Currently amended) The system as recited in claim 51,

wherein the first device is further configured to send a first message in the data representation language to the proxy service, wherein the first message includes information for the service~~second device~~; and

wherein the proxy service is further configured to:

convert the first message in the data representation language to a first transmission compatible with the second computing environment and receivable by the service~~second device~~ in the second computing environment; and

send the first transmission to the service~~second device~~ in the second computing environment.

63. (Currently amended) The system as recited in claim 51,

wherein the ~~service-second device~~ is configured to send a first transmission compatible with the second computing environment to the proxy service, wherein the first transmission includes information for the first device;

wherein the proxy service is further configured to:

convert the first transmission to a first message in the data representation language, wherein the first message includes the information from the first transmission; and

send the first message to the first device in the first computing environment.

64. (Currently amended) The system as recited in claim 63, wherein the first device is a client in the first computing environment, ~~wherein the second device is a service accessible through the second computing environment~~, and wherein the information in the first transmission is results data generated by the ~~service-second device~~ in response to a request sent to the ~~service-second device~~ by the first device through the proxy service.

65. (Currently amended) The system as recited in claim 51,

wherein the ~~service-second device~~ is configured to send a first transmission compatible with the second computing environment to the proxy service, wherein the first transmission includes data for the first device;

wherein the proxy service is further configured to:

store the data received in the first transmission; and

provide an advertisement for the stored data to the first device, wherein the advertisement for the stored data includes access information for the stored data.

66. (Original) The system as recited in claim 65, wherein the first device is further configured to:

access the advertisement for the stored data; and

access the stored data in accordance with the access information for the stored data in the advertisement for the stored data.

67. (Currently amended) The system as recited in claim 65, wherein the first device is a client in the first computing environment, ~~wherein the second device is a service accessible through the second computing environment,~~ and wherein the data in the first transmission is results data generated by the service ~~second device~~ in response to a request sent to the service ~~second device~~ by the first device through the proxy service.

68. (Original) The system as recited in claim 51, wherein the second environment is a message-based environment using a different language for messages than the data representation language used for messages in the first environment.

69. (Original) The system as recited in claim 51, wherein the second environment is a non-message based environment.

70. (Original) The system as recited in claim 51, wherein communication among entities in the second environment uses remote method invocation (RMI).

71. (Original) The system as recited in claim 70, wherein the second environment is a Jini environment.

72. (Currently amended) The system as recited in claim 51, wherein the second environment is an enterprise computing environment, wherein the second device is an enterprise service accessible through the enterprise computing environment.

73. (Original) The system as recited in claim 51, wherein the data representation language is eXtensible Markup Language (XML).

74. – 99. (Canceled)

100. (Currently amended) A computer-readable storage medium storing program instructions, ~~wherein the program instructions are computer-executable to which when~~ executed by computer implement:

a proxy service providing an advertisement for a service accessible through a second computing environment, wherein the advertisement includes access information for accessing the service in a first computing environment based upon a message passing model;

in response to a first entity in the first computing environment using the access information from the advertisement to access the service, the ~~accessing a~~ proxy service through receiving messages in a data representation language from the first entity in the first computing environment and according to the access information in the advertisement;

the proxy service providing to the first entity an interface to a second entity in the second computing environment, wherein the second entity is the service accessible through the second computing environment; wherein the first entity can not distinguish between the proxy service ~~appears to the first~~

~~entity as the second entity~~ and the service in the second computing environment; and

the proxy service providing to the first entity ~~accessing~~ access to the service
~~second entity~~ in the second computing environment through the interface
provided by the proxy service and according to the access information in
the advertisement.

101. (Currently amended) The computer-readable storage medium as recited in claim 100, wherein the first entity is a client in the first computing environment, ~~wherein the second entity is a service accessible through the second computing environment,~~ and wherein the interface provided by the proxy service enables the first entity to access resources provided by the second entity to clients in the second environment.

102. (Currently amended) The computer-readable storage medium as recited in claim 101, wherein, in said providing to the first entity the interface to the second entity in the second computing environment, the program instructions, when executed by computer ~~are further computer-executable to~~ implement locating the service ~~second entity~~ among a plurality of services accessible through the second computing environment.

103. (Currently amended) The computer-readable storage medium as recited in claim 102, wherein, in said locating the service ~~second entity~~ among the plurality of services accessible through the second computing environment, the program instructions, when executed by computer ~~are further computer-executable to~~ implement determining that the second entity includes information identifying the entity as a service accessible by entities in the first environment through proxy service interfaces to the second computing environment.

104. (Currently amended) The computer-readable storage medium as recited in 101, wherein, in providing to the first entity an interface to a second entity in the second computing environment, the program instructions, when executed by computer, ~~are~~

~~further computer-executable to implement providing [[an]] the advertisement for the service second entity, wherein the advertisement for the second entity includes access information for accessing the second entity in the second environment from the first environment.~~

105. (Currently amended) The computer-readable storage medium as recited in claim 104,

wherein the program instructions, when executed by computer ~~are further computer-executable to implement publishing the advertisement for the service second entity on a space in the first computing environment; and~~

~~wherein, in accessing a second entity in the second computing environment through an interface, the program instructions are further computer-executable to implement:~~

~~the first entity accessing the advertisement for the second entity from one or more advertisements published on the space; and~~

~~the first entity accessing the second entity in accordance with the access information in the advertisement for the second entity.~~

106. (Currently amended) The computer-readable storage medium as recited in claim 104,

wherein the advertisement includes information describing one or more computer programming language method calls to methods in ~~[[the]]~~ a computer programming language provided by the second entity;

wherein the information included in the advertisement is usable to program ~~instructions are further computer-executable to implement construct[[ing]]~~

on the first entity a client method gate configured to provide an interface to the service ~~second entity~~ by generating data representation language messages including information representing the method calls.

107. (Currently amended) The computer-readable storage medium as recited in claim 106, wherein, in ~~the first entity accessing~~ providing access to the second entity service, the program instructions, when executed by computer ~~are further computer-executable to implement:~~

~~the first entity generating a method call in the computer programming language;~~

a proxy method gate on the proxy service receiving from a [[the]] client method gate on the first entity ~~generating~~ a data representation language message including information representing [[the]] a method call in the computer programming language;

~~the client method gate sending the data representation language message to a proxy method gate comprised on the proxy service;~~

the proxy method gate generating one or more objects in the computer programming language from the information representing the method call;

the proxy service invoking a method [[on]] of the service ~~second entity~~, wherein the one or more objects are passed to the method in said invoking; and

~~the second entity executing the invoked method, wherein said executing generates results data; and~~

the proxy service receiving ~~second entity sending the~~ results data ~~to the proxy~~ from the service in response to the service executing the invoked method service.

108. (Currently amended) The computer-readable storage medium as recited in claim 107, wherein the program instructions, when executed by computer ~~are further computer-executable~~ to implement:

the proxy service generating a results advertisement for the results data;

the proxy service sending the results advertisement to the client method gate; and

wherein the results advertisement is usable by the first entity to generate
~~generating~~ a results method gate from the results advertisement sent to the client method gate.

109. (Previously presented) The computer-readable storage medium as recited in claim 107, wherein the computer programming language is Java.

110. (Currently amended) The computer-readable storage medium as recited in claim 100, the program instructions, when executed by computer ~~are further computer-executable~~ to implement:

the proxy service receiving from the first entity ~~sending~~ a first message in the data representation language to the proxy service, wherein the first message includes information for the service ~~second entity~~;

converting the first message in the data representation language to a first transmission compatible with the second computing environment and receivable by the service ~~second entity~~ in the second computing environment; and

sending the first transmission to the service ~~second entity~~ in the second computing environment.

111. (Currently amended) The computer-readable storage medium as recited in claim 100, the program instructions, when executed by computer ~~are further computer-executable~~ to implement:

receiving from the service ~~second entity sending~~ a first transmission compatible with the second computing environment ~~to the proxy service~~, wherein the first transmission includes information for the first entity;

converting the first transmission to a first message in the data representation language, wherein the first message includes the information from the first transmission; and

sending the first message to the first entity in the first computing environment;

wherein the information in the first transmission is results data generated by the service ~~second entity~~ in response to a request sent to the service ~~second entity~~ by the first entity through the proxy service.

112. (Currently amended) The computer-readable storage medium as recited in claim 100, the program instructions, when executed by computer ~~are further computer-executable~~ to implement:

receiving from the service ~~second entity sending~~ a first transmission compatible with the second computing environment ~~to the proxy service~~, wherein the first transmission includes data for the first entity;

storing the data received in the first transmission; and

providing an advertisement for the stored data to the first entity, wherein the advertisement for the stored data includes access information for the stored data;

wherein the data in the first transmission is results data generated by the service ~~second entity~~ in response to a request sent to the service ~~second entity~~ by the first entity through the proxy service.

113. (Previously presented) The computer-readable storage medium as recited in claim 100, wherein the second environment is a non-message based environment.

114. (Previously presented) The computer-readable storage medium as recited in claim 100, wherein communication among entities in the second environment uses remote method invocation (RMI).

115. (Previously presented) The computer-readable storage medium as recited in claim 114, wherein the second environment is a Jini environment.

116. (Currently amended) The computer-readable storage medium as recited in claim 100, wherein the second environment is an enterprise computing environment, wherein the service ~~second entity~~ is an enterprise service accessible through the enterprise computing environment.

117. (Previously presented) The computer-readable storage medium as recited in claim 100, wherein the data representation language is eXtensible Markup Language (XML).

118. – 135. (Canceled)

136. (Previously presented) A method for bridging a first computing environment based upon a message passing model to a second computing environment, comprising:

a first entity in the first computing environment accessing a proxy service through messages in a data representation language;

the proxy service providing to the first entity an interface to a second entity in the second computing environment;

the first entity accessing the second entity in the second computing environment through the interface provided by the proxy service;

wherein the proxy service providing to the first entity an interface to a second entity in the second computing environment comprises providing an advertisement for the second entity, wherein the advertisement for the second entity includes access information for accessing the second entity in the second environment from the first environment; and

wherein the advertisement includes information describing one or more computer programming language method calls to methods in the computer programming language provided by the second entity, the method further comprising constructing on the first entity a client method gate configured to provide an interface to the second entity by generating data representation language messages including information representing the method calls.

137. (Canceled)

138. (Previously presented) A method for bridging a first computing environment based upon a message passing model to a second computing environment, comprising:

a first entity in the first computing environment accessing a proxy service through messages in a data representation language;

the proxy service providing to the first entity an interface to a second entity in the second computing environment, wherein said providing an interface comprises sending to the first entity a schema defining one or more messages in the data representation language for accessing the second entity; and

the first entity accessing the second entity in the second computing environment through the interface provided by the proxy service.

139. (Canceled)